

REMARKS

Claims 1 – 29 are presently pending. In the above-identified Office Action, the Examiner rejected Claim 13 under 35 U.S.C. § 102(b) as being anticipated by Dennis ('772). Claims 1, 12 and 29 were rejected under 35 U.S.C. § 102(e) as being anticipated by Shima ('508). Claims 1 and 2 were also rejected under 35 U.S.C. § 102(e) as being anticipated by Masuda *et al.* ('785). Claim 28 was rejected under 35 U.S.C. § 102(e) as being anticipated by Chawla *et al.* ('711). Claims 3 – 11 and 14 – 27 were objected to as being dependent upon a rejected base claim. These claims were indicated as being allowable if rewritten or amended to include the limitations of the base claim and any intervening claims.

The indication of allowable subject matter is gratefully acknowledged. For the reasons set forth more fully below, reconsideration, allowance and passage to issue are respectfully requested.

The present invention addresses the need in the art for a highly efficient, compact, and cost-effective, wideband monolithic HPA capable of operating at RF, X-band, and/or S-band that is easily integrated with various chipsets, including GaAs-based integrated circuits.

In the illustrative embodiment, the invention is an efficient broadband amplifier having a mechanism for amplifying an input signal via a high-speed switch and providing an amplified signal in response thereto. An additional mechanism filters the amplified signal via common mode rejection and provides an output signal in response thereto.

The invention is set forth in Claims of varying scope of which Claim 1 is illustrative. Claim 1 recites:

1. An efficient amplifier comprising:
means for amplifying an input signal via a high-speed switch
and providing an amplified signal in response thereto and
means for filtering said amplified signal **via common mode rejection** and providing an output signal in response thereto.
(Emphasis added.)

None of the references, taken alone or in combination, teach, disclose or suggest the invention as presently claimed. That is, none of the references teach, disclose or suggest an efficient amplifier having means for filtering an amplified signal **via common mode rejection**.

In the above-identified Office Action, the Examiner rejected Claim 1 as being anticipated by Shima and Masuda *et al.* Shima was cited as showing a means (6) which filters the amplified signal (S4) via common mode rejection, however, this assertion is not supported by the reference. That is, it is clear from the figure referenced by the Examiner (Fig. 1A), that common mode rejection is not employed. Further, no mention is made in the reference of 'common mode rejection'.

Masuda *et al.* was cited as including means which performs common mode rejection, however, nothing in the reference appears to perform such function. In any event, Applicants have enclosed an Affidavit that establishes an effective date of invention that precedes the effective date of Shima and Masuda *et al.* Accordingly, Claims 1, 12, 29 and the Claims dependent thereon should be allowable.

Claim 13 was rejected as being anticipated by Dennis. The Examiner suggested, *inter alia*, that Dennis teaches a broadband balun (20). However, it is clear from the reference that element (20) is merely a transformer. No teaching is provided in the reference that suggests that the transformer (20) is a **broadband balun** as set forth in Claim 13. Hence, Applicants respectfully submit that Claims 13 – 27 should be allowed.

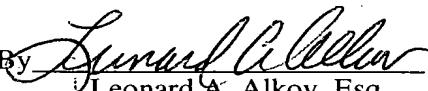
Claim 28 was rejected as being anticipated by Chawla *et al.* The Examiner suggested, *inter alia*, that Chawla *et al.* teaches an input circuit (310) having a "broadband slotline input balun". However, there are several shortcomings in the teachings of this reference with respect to Claim 28.

The reference does not teach: 1) a broadband slotline input balun; 2) a switch characterized by little or no overlap between voltage and current waveforms; 3) a switch incorporating one or more Pseudomorphic High Electron Mobility Transistors (pHEMPT's); 4) a broadband output slotline balun and 5) an output circuit further including a Barium Strontium Titanate (BST) tunable capacitor as set forth in Claim 28.

Hence, Claim 28 should be allowable as well.

Accordingly, reconsideration, allowance and passage to issue are respectfully requested.

Respectfully submitted,
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